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U.S. Department of the Interior • U.S. Geological Survey

# MINERAL INDUSTRY SURVEYS

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## SULFUR IN JUNE 1997

During the month, production of combined Frasch and recovered elemental sulfur was 835,000 metric tons, according to the U.S. Geological Survey. June production was 10% higher than that of May 1997 and 13% higher than that of June 1996. Shipments of these combined products were 13% lower than those of May 1997.

Import and export data for June 1997 were not available at

the time of publication. Import/export data and apparent consumption for June 1997 will be published in the July 1997 Sulfur Mineral Industry Surveys. Imports of recovered sulfur for May 1997 were 108,000 tons. Exports of sulfur, for the same period, were 3,000 metric tons. Imports of sulfuric acid for May 1997 were 188,000 tons; exports were 8,000 tons.

TABLE 1  
SALIENT SULFUR STATISTICS 1/

(Thousand metric tons)

| Period         | Production |              |                |          | Shipments,<br>all sources |
|----------------|------------|--------------|----------------|----------|---------------------------|
|                | Frasch     | Petroleum 2/ | Natural gas 3/ | Total 3/ |                           |
| 1996           | W          | 5,370        | 4,900 r/       | 10,300   | 10,300 r/                 |
| Jan.-June 1996 | W          | 2,600        | 2,070          | 4,670    | 4,630                     |
| 1996:          |            |              |                |          |                           |
| June           | W          | 416          | 320 r/         | 736 r/   | 703 r/                    |
| July           | W          | 433          | 427            | 860      | 832                       |
| August         | W          | 468          | 432            | 900      | 917                       |
| September      | W          | 440          | 401            | 841      | 872                       |
| October        | W          | 466          | 412            | 878      | 885                       |
| November       | W          | 481          | 354            | 835      | 858                       |
| December       | W          | 484          | 413            | 897      | 949                       |
| 1997:          |            |              |                |          |                           |
| January        | W          | 467 r/       | 430 r/         | 897 r/   | 902 r/                    |
| February       | W          | 388 r/       | 411 r/         | 799 r/   | 817 r/                    |
| March          | W          | 447 r/       | 472 r/         | 919 r/   | 910 r/                    |
| April          | W          | 490          | 432 r/         | 922 r/   | 954 r/                    |
| May            | W          | 500 r/       | 424 r/         | 924 r/   | 940 r/                    |
| June           | W          | 447 p/       | 388 p/         | 835 p/   | 822 p/                    |
| Total          | W          | 2,740        | 2,560          | 5,300    | 5,350                     |

p/ Preliminary. r/ Revised. W Withheld to avoid disclosing company proprietary data; included with "Natural gas."

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes a small quantity from coking operations.

3/ Includes data from Frasch producers.

TABLE 2  
U.S. IMPORTS OF SULFUR 1/

(Thousand metric tons and thousand dollars)

| Period        | Canada   |          | Mexico   |          | Total, all countries 2/ |          |
|---------------|----------|----------|----------|----------|-------------------------|----------|
|               | Quantity | Value 3/ | Quantity | Value 3/ | Quantity                | Value 3/ |
| 1996:         | 1,090    | 31,000   | 467      | 21,200   | 1,730                   | 61,600   |
| Jan.-May 1996 | 486      | 16,000   | 166      | 7,690    | 720                     | 29,000   |
| 1996:         |          |          |          |          |                         |          |
| May           | 119      | 2,400    | 37       | 1,280    | 186                     | 5,520    |
| June          | 114      | 2,100    | 36       | 1,760    | 180                     | 4,860    |
| July          | 111      | 4,610    | 36       | 1,680    | 148                     | 6,700    |
| August        | 80       | 1,590    | 57       | 2,510    | 157                     | 4,910    |
| September     | 59       | 1,380    | 58       | 2,470    | 135                     | 4,410    |
| October       | 92       | 2,170    | 19 e/    | 826      | 111                     | 3,110    |
| November      | 81       | 1,740    | 40       | 1,750    | 155 e/                  | 4,670    |
| December      | 66       | 1,350    | 57       | 2,510    | 123                     | 3,950    |
| 1997:         |          |          |          |          |                         |          |
| January       | 74       | 1,440    | 60       | 2,730    | 134                     | 4,360    |
| February      | 82       | 1,870    | 41       | 3,220    | 122                     | 5,290    |
| March         | 83       | 1,620    | 61       | 2,550    | 159                     | 5,150    |
| April         | 84       | 1,740    | 21       | 989      | 105                     | 3,360    |
| May           | 87       | 2,110    | 21       | 1,000    | 108                     | 4,390    |
| Total         | 410      | 8,770    | 204      | 10,500   | 628                     | 22,500   |

e/ Estimated.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ May include other countries not listed.

3/ Declared customs valuation.

Source: Bureau of the Census; as adjusted by U.S. Geological Survey.

TABLE 3  
U.S. IMPORTS OF SULFURIC ACID 1/

(Thousand metric tons and thousand dollars)

| Period        | Canada   |                |          | Europe   |                |          | Total 2/ |                |          |
|---------------|----------|----------------|----------|----------|----------------|----------|----------|----------------|----------|
|               | Quantity | Sulfur content | Value 3/ | Quantity | Sulfur content | Value 3/ | Quantity | Sulfur content | Value 3/ |
| 1996:         | 1,600    | 522            | 41,000   | 210      | 69             | 2,520    | 2,080    | 682            | 48,500   |
| Jan.-May 1996 | 639      | 209            | 17,600   | 115      | 39             | 1,460    | 925      | 303            | 21,000   |
| 1996:         |          |                |          |          |                |          |          |                |          |
| May           | 147      | 48             | 3,990    | 20       | 7              | 223      | 192      | 63             | 4,510    |
| June          | 113      | 37             | 2,670    | 21       | 7              | 160      | 140      | 46             | 3,460    |
| July          | 106      | 35             | 2,770    | 21       | 7              | 86       | 132      | 43             | 3,210    |
| August        | 127      | 41             | 3,260    | 11       | 3              | 176      | 138      | 45             | 3,620    |
| September     | 156      | 51             | 3,760    | 19       | 6              | 70       | 195      | 64             | 4,160    |
| October       | 144      | 47             | 3,690    | --       | --             | --       | 161      | 53             | 3,890    |
| November      | 166      | 54             | 3,900    | 10       | 3              | 79       | 223      | 73             | 4,330    |
| December      | 146      | 48             | 3,360    | 13       | 4              | 496      | 167      | 55             | 4,860    |
| 1997:         |          |                |          |          |                |          |          |                |          |
| January       | 108      | 35             | 3,080    | 13       | 4              | 207      | 145      | 47             | 4,650    |
| February      | 135      | 44             | 3,320    | --       | --             | --       | 139      | 45             | 4,250    |
| March         | 131      | 43             | 3,390    | 28       | 9              | 116      | 192      | 63             | 4,330    |
| April         | 119      | 39             | 3,050    | --       | --             | --       | 119      | 39             | 3,200    |
| May           | 132      | 43             | 3,490    | --       | --             | --       | 188      | 61             | 4,090    |
| Total         | 625      | 204            | 16,300   | 41       | 13             | 323      | 783      | 255            | 20,500   |

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ May include other countries not listed.

3/ Declared customs valuation.

Source: Bureau of the Census.

TABLE 4  
U.S. EXPORTS OF SULFUR AND SULFURIC ACID 1/

(Thousand metric tons and thousand dollars)

| Period        | Sulfur   |          | Sulfuric acid |                |          |
|---------------|----------|----------|---------------|----------------|----------|
|               | Quantity | Value 2/ | Quantity      | Sulfur content | Value 2/ |
| 1996:         | 913      | 51,700   | 117           | 38             | 12,300   |
| Jan.-May 1996 | 385      | 25,300   | 45            | 14             | 5,100    |
| 1996:         |          |          |               |                |          |
| May           | 15       | 2,330    | 9             | 3              | 1,080    |
| June          | 124      | 4,990    | 8             | 3              | 785      |
| July          | 62       | 3,160    | 9             | 3              | 978      |
| August        | 139      | 7,280    | 12            | 4              | 1,090    |
| September     | 36       | 1,910    | 12            | 4              | 1,080    |
| October       | 92       | 3,760    | 12            | 4              | 1,440    |
| November      | 59       | 3,510    | 10            | 3              | 869      |
| December      | 16       | 1,810    | 9             | 3              | 1,020    |
| 1997:         |          |          |               |                |          |
| January       | 10       | 746      | 11            | 4              | 1,170    |
| February      | (3/)     | 15       | 7             | 2              | 834      |
| March         | 10       | 856      | 10            | 3              | 1,030    |
| April         | 3        | 290      | 7             | 2              | 931      |
| May           | 3        | 659      | 8             | 3              | 941      |
| Total         | 27       | 2,570    | 43            | 14             | 4,900    |

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Declared f.a.s. (free alongside ship) valuation.

3/ Less than 1/2 unit.

Source: Bureau of the Census.

TABLE 5  
U.S. CONSUMPTION OF SULFUR 1/

(Thousand metric tons)

| Period        | Domestic sources 2/ | Imports | Consumption |
|---------------|---------------------|---------|-------------|
| 1996:         | 9,460               | 1,730   | 11,200      |
| Jan.-May 1996 | 3,910               | 720     | 4,630       |
| 1996:         |                     |         |             |
| May           | 848                 | 186     | 1,030       |
| June          | 579 r/              | 180     | 759 r/      |
| July          | 770                 | 148     | 918         |
| August        | 778                 | 157     | 935         |
| September     | 836                 | 135     | 971         |
| October       | 793                 | 111     | 904         |
| November      | 799                 | 155 e/  | 954         |
| December      | 933                 | 123     | 1,060       |
| 1997:         |                     |         |             |
| January       | 892 r/              | 134     | 1,030 r/    |
| February      | 817 r/              | 122     | 939 r/      |
| March         | 900 r/              | 159     | 1,060       |
| April         | 951 r/              | 105     | 1,060 r/    |
| May           | 937                 | 108     | 1,050       |
| Total         | 4,500               | 628     | 5,130       |

e/ Estimated. r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Calculated as shipments minus exports.

TABLE 6  
RECOVERED SULFUR PRODUCED AND SHIPPED IN THE UNITED STATES,  
BY PAD (PETROLEUM ADMINISTRATION FOR DEFENSE) DISTRICT 1/

(Thousand metric tons)

| District and source | June 1997 p/ |           | May 1997   |           | Total 1997 2/ |           | Year to date 1996 |           |
|---------------------|--------------|-----------|------------|-----------|---------------|-----------|-------------------|-----------|
|                     | Production   | Shipments | Production | Shipments | Production    | Shipments | Production        | Shipments |
| PAD 1:              |              |           |            |           |               |           |                   |           |
| Petroleum and coke  | 4            | 4         | 6          | 6         | 42            | 41        | 105               | 111       |
| Natural gas         | 16           | 16        | 17         | 15        | 91            | 91        | 25                | 25        |
| Total               | 20           | 21        | 23         | 21        | 134           | 132       | 130               | 136       |
| PAD 2:              |              |           |            |           |               |           |                   |           |
| Petroleum and coke  | 64           | 66        | 89 r/      | 88 r/     | 461           | 464       | 440               | 440       |
| Natural gas         | 3            | 3         | 3          | 3         | 18            | 18        | 25                | 25        |
| Total               | 67           | 69        | 92 r/      | 91 r/     | 480           | 483       | 465               | 465       |
| PAD 3: 3/           |              |           |            |           |               |           |                   |           |
| Petroleum and coke  | 274          | 257       | 294        | 308       | 1,620         | 1,610     | 1,540             | W         |
| Natural gas 4/      | 291          | 302       | 317 r/     | 323 r/    | 1,930         | 1,990     | 1,520 r/          | W         |
| Total 5/            | 565          | 559       | 611 r/     | 631 r/    | 3,550         | 3,610     | 3,050 r/          | 3,030     |
| PAD 4 and 5: 6/     |              |           |            |           |               |           |                   |           |
| Petroleum and coke  | 105          | 96        | 112        | 110       | 617           | 615       | 520               | 516       |
| Natural gas         | 78           | 77        | 87         | 87        | 515           | 507       | 501               | 493       |
| California          | 88           | 79        | 90         | 90        | 499           | 499       | 406               | 404       |
| Total               | 183          | 173       | 199        | 197       | 1,130         | 1,120     | 1,020             | 1,010     |
| Grand total         | 835          | 822       | 924 r/     | 940 r/    | 5,300         | 5,350     | 4,670 r/          | 4,630 r/  |

p/ Preliminary. r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ May include revisions to prior months.

3/ Includes Puerto Rico and the U.S. Virgin Islands.

4/ Frasch production is included in the natural gas production to avoid disclosing company proprietary data.

5/ Includes data from Frasch producers.

6/ Quantities produced and shipped in California included in petroleum and natural gas. California total shown for information purposes only.

TABLE 7  
COMPARATIVE SULFUR AND SULFURIC ACID STATISTICS 1/

(Million metric tons per year [annualized basis] and dollars per metric ton for period shown)

|  | 1997     |          |              | 1996  |
|--|----------|----------|--------------|-------|
|  | June     | May      | Year to date | Total |
| Production                                       | 10.16 p/ | 10.88 r/ | 10.68        | 10.30 |
| Shipments  | 10.00 p/ | 11.07    | 10.78        | 10.40 |
| Exports of sulfur                                | NA       | 0.04     | 0.07         | 0.91  |
| Imports of sulfur:                               |          |          |              |       |
| Canada   | NA       | 1.02     | 0.99         | 1.09  |
| Mexico   | NA       | 0.25     | 0.49         | 0.47  |
| Total  | NA       | 1.27     | 1.52         | 1.73  |
| Exports of H <sub>2</sub> SO <sub>4</sub>        | NA       | 0.09     | 0.10         | 0.12  |
| Imports of H <sub>2</sub> SO <sub>4</sub> :      |          |          |              |       |
| Canada   | NA       | 1.55     | 1.51         | 1.60  |
| Europe   | NA       | --       | 0.10         | 0.21  |
| Total 2/   | NA       | 2.21     | 1.89         | 2.08  |
| Consumption: 3/                                  |          |          |              |       |
| Domestic sources                                 | NA       | 11.03    | 10.87        | 9.46  |
| Imports  | NA       | 1.27     | 1.52         | 1.73  |
| Total  | NA       | 12.30    | 12.38        | 11.20 |
| Sulfur export values 4/                          | NA       | \$220    | \$95         | \$57  |
| Sulfur import values: 4/                         |          |          |              |       |
| Canada   | NA       | \$24     | \$21         | \$28  |
| Mexico   | NA       | \$47     | \$51         | \$45  |
| Average  | NA       | \$41     | \$36         | \$36  |
| H <sub>2</sub> SO <sub>4</sub> export values 4/  | NA       | \$118    | \$114        | \$106 |
| H <sub>2</sub> SO <sub>4</sub> import values: 4/ |          |          |              |       |
| Canada   | NA       | \$26     | \$26         | \$26  |
| Europe   | NA       | --       | \$8          | \$12  |
| Average  | NA       | \$22     | \$26         | \$23  |

p/ Preliminary. r/ Revised. NA Not available.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes other countries not listed.

3/ Because trade data was not available, June consumption was not determined.

4/ Average value per ton for most recent data available.